

REMARKS

Applicants respectfully request reconsideration of this application. Claims 1-18 and 30-40 are pending in this application. Claims 1 and 10 have been amended to more particularly point out and distinctly claim the invention. New claims 30-40 have been added. Support for the amendments and new claims can be found in figure 5 and paragraphs [17], [18], [22], [23], [27], [28], and [29]. No new matter has been added. Applicant reserves all rights with respect to the Doctrine of Equivalents.

35 U.S.C. § 102(e) and 35 U.S.C. § 102(b) Rejections

Claims 1, 2, and 9 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,872,453 to Arnaud et al. (hereinafter "Arnaud"). In light of the amendment, the Examiner's rejections have become moot. Nonetheless, the following remarks regarding the Examiner's rejections and the amended claims may be helpful to expedite prosecution.

Applicant's invention relates to disposing a thermochromatic material adjacent to a carrier substrate coupled to a heat generating component. The **activation temperature** of the thermochromatic material is **above** the **normal operating temperature** of the heat generating component. This facilitates the detection of insufficient heat dissipation or the detection of a defective component, which is overheating.

In contrast, Arnaud discloses a thermochromatic layer over a substrate and a conductive layer, so as to switch the reflecting/absorbent state of a solar panel. Arnaud fails to disclose or suggest all the elements of independent claim 1. The

normal operating temperature of the conductive layer, alleged to be the “heat generating component,” must at least exceed the activation temperature of the thermochromatic material for the solar panel to function properly. The conductive layer is specifically designed to achieve temperatures high enough to switch the reflecting/absorbing state in order to function as intended. Therefore, not only does Arnaud fail to disclose or suggest an activation temperature **above** the normal operating temperature of the component, Arnaud actually teaches away from the invention because the thermochromatic layer in Arnaud must have an activation temperature **below** the conductive layer’s normal operating temperature in order for the solar panel to function.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants’ silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

In conclusion, the claims, as amended, are asserted to overcome the Examiner’s rejections and the claims are believed to be in condition for allowance. Applicants respectfully request withdrawal of the rejection.

Claims 1-2, 6, 9-13 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,229,514 to Larson (hereinafter “Larson”). In light of the amendment, the Examiner’s rejections have become moot. Nonetheless, the following remarks regarding the Examiner’s rejections and the amended claims may

be helpful to expedite prosecution.

In light of the above remarks, Larson also fails to disclose or suggest all the elements of independent claims 1 and 10, and actually teaches away from the invention. Larson discloses a display device consisting of electrodes on a substrate, which when operational become heated and heat the thermochromic material from room temperature to the electrode's operating temperature, which is above the activation temperature of the thermochromic material. When the electrode is at room temperature, it is not operating. The electrode operates when it is turned on, not off. Therefore, the activation temperature of the thermochromic material is **below** the electrode's normal **operating** temperature.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

In conclusion, the claims, as amended, are asserted to overcome the Examiner's rejections and the claims are believed to be in condition for allowance. Applicants respectfully request withdrawal of the rejection.

Claims 1-3, 6, 9 -13 and 17-18 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,922,242 to Parker (hereinafter "Parker"). In light of the amendment, the Examiner's rejections have become moot. Nonetheless, the following remarks regarding the Examiner's rejections and the

amended claims may be helpful to expedite prosecution.

In light of the above remarks, Parker also fails to disclose or suggest all the elements of the independent claims and teaches away from the invention. Parker discloses a display device having a thermochromatic material and a resistive element, which when **turned on so as to operate**, achieves a temperature **above the activation** temperature of the thermochromatic material and changes it from opaque to transparent, see abstract. Parker states that the resistive element exhibits PTC behavior and does **not overheat**, supporting the assertion that the resistor is at **normal operating temperature** when the resistor is **turned on**.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

In conclusion, the claims, as amended, are asserted to overcome the Examiner's rejections and the claims are believed to be in condition for allowance. Applicants respectfully request withdrawal of the rejection.

35 U.S.C. § 103(a) Rejections

Claims 1-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Parker or Arnaud or Larson in view of U.S. Patent No. 6,880,396 to Rait (hereinafter "Rait"). In light of the amendment, the Examiner's rejections have become moot. Nonetheless, the following remarks regarding the Examiner's

rejections and the amended claims may be helpful to expedite prosecution.

Rait fails to remedy the deficiencies of Parker, Arnaud, and Larson discussed above. Rait discloses a level indicator device, which fails to disclose or suggest all the limitations of the independent claims and teaches away from the invention. The level indicator is operational when the activation temperature of the thermochromatic material is **below** the operating temperature of the liquid level indicator in order to detect the liquid level. Further, the motivation to combine Rait with Parker, Arnaud, and Larson is unclear.

Applicant asserts that the claims as amended contain the limitation that the material property of the thermochromatic material is such that its activation temperature is **above the normal operating temperature** of the component, which is not a functional limitation, but a property of the thermochromatic material, the component, and the device. Therefore, it is asserted that the claims as amended further limit the thermochromatic material.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

In conclusion, the claims, as amended, are asserted to overcome the Examiner's rejections and the claims are believed to be in condition for allowance. Applicants respectfully request withdrawal of the rejection.

In light of the above remarks, the new independent claim 30, and dependent claims 31-40, are asserted to be allowable over the prior art of record. Claim 30 contains the limitation that the thermochromatic material is for detecting heat from the component, which is in excess of normal operating conditions. None of the prior art of record disclose or suggest a device for detecting excess heat, but rather disclose devices that are designed to heat up to an operating temperature that is intended to produce a change of state. Therefore, instead of the required thermochromatic material having an activation temperature **above** the **normal operating temperature** of the component, the prior art of record disclose the activation temperature **below** the **normal operating temperature**.


Furthermore, the prior art of record fails to provide a **visual thermal differential** of those areas on the carrier substrate having **coupled components** with temperatures **above** their **normal operating temperatures**.

In conclusion, applicant respectfully submits that in view of the arguments set forth herein, the applicable rejections have been overcome. If the Examiner believes a telephone interview would expedite the prosecution of this application, the Examiner is invited to contact Michael Bernadicou at (408) 720-8300. If there are any additional charges, please charge our Deposit Account No. 02-2666.

Respectfully submitted,

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